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Descriptions of new species of Amalda and Chilotygma (Gastropoda: Olividae: Ancillinae) with a note on the systematics of Amalda, Ancillus and Ancillista

by

R. N. Kilburn

(Natal Museum, Pietermaritzburg)

SYNOPSIS

Amalda crosnieri from off the north-western Malagasy Republic, *A. jenneri* and *A. lemaitrei* from the Agulhas Bank, and *Chilotygma testudae* from the Gulf of Aden are described, and the genera *Ancillus* Montfort, 1810 (= *Turrancilla* Von Martens, 1904), *Ancillista* Iredale, 1936, and *Amalda* H. & A. Adams, 1853, are redefined.

Amalda H. & A. Adams, 1853

Amalda H. & A. Adams, 1853: 148. Type species (subsequent designation Vokes, 1939) *Ancillaria tankervillii* Swainson, 1825.

Although agreeing well in most characters with members of the genus *Amalda*, the three species here described should be referred, according to the classification of Chavan (1965), to the genus *Ancillus* Montfort, 1810, because they lack an ancillid groove and labral denticle (see Fig. 1). However, it would appear that these characters are not only of doubtful use in systematics but that *Ancillus* has been used to cover a polyphyletic assemblage of taxa. Thus *Ancillista* Iredale, 1936, regarded by Chavan as a synonym of *Ancillus*, and *Turrancilla* Von Martens, 1904, treated as a subgenus,

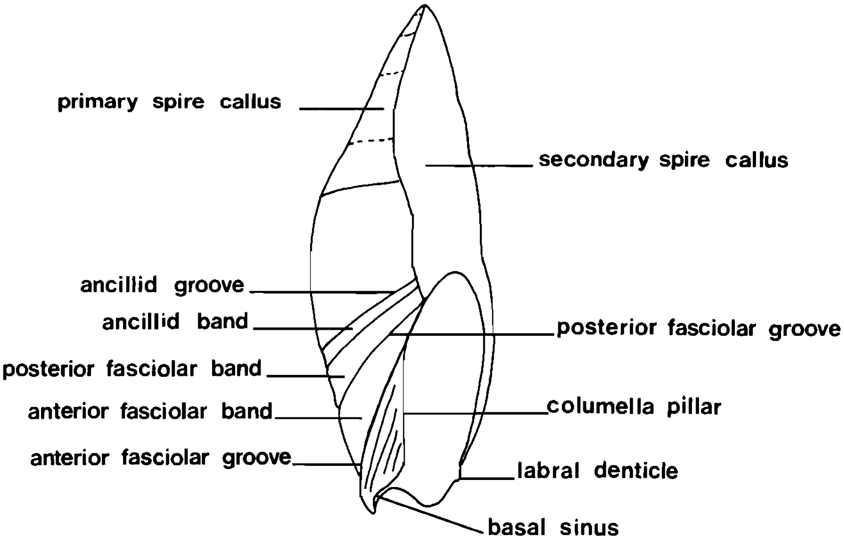

primary spire callus
secondary spire callus
ancillid groove
ancillid band
posterior fasciolar groove
posterior fasciolar band
anterior fasciolar band
columella pillar
anterior fasciolar groove
labral denticle
basal sinus

Fig. 1. Diagram of generalized ancillid to illustrate terminology used.

are clearly very distinct from one another. They differ in characters of protoconch, operculum, radula, columella pillar and development of metapodial lobes. Furthermore it has been established (Kilburn, unpublished data) that the ancillid groove and tooth are present or absent according to species in subgenus *Sparella* of *Ancilla* Lamarck, 1801, and it seems probable that the same applies to *Amalda*. Indeed a vestigial groove is not infrequently present in individuals of many unrelated species, belonging to different genera, which supposedly lack one.

The question of the identity of *Ancillus* is a difficult one. The type species, *A. buccinoides* (Lamarck, 1803), is a fossil, so that few characters are available for interpretation. However, the large protoconch and simple columella pillar of *Ancillista* show that relationships with that group are not close. One character alone appears to give a clue as to relationships between *Ancillus*, *Amalda* and *Turrancilla*. In Recent species of *Turrancilla* there appears to be no secondary spire callus, and the primary callus forms a broad shroud-like deposit which completely covers each whorl and intrudes on the preceding one, forming a false suture, the apex often protruding as from a sheath. In *Amalda* the primary callus is glaze-like, evidently never forming a false suture, and is frequently partially or wholly covered by the secondary callus. In *A. buccinoides* the primary callus resembles that of *Turrancilla* and on these grounds it would appear advisable to synonymize the two genera.

Both *Amalda* and *Ancillus* now show relict distribution patterns. *Amalda* is predominantly a cold-temperate genus, the ranges of most species lying peripheral to those of such basically tropical genera as *Ancilla*, *Ancillista*, *Eburna* and *Chilotygma*. *Ancillus* on the other hand is more characteristic of continental slopes, 80% of known species being bathyal in distribution.

The three genera discussed here may be defined provisionally as follows:

Ancillus (= *Turrancilla*)

Operculum narrowly lanceolate with terminal nucleus, almost filling aperture; rachidian strongly arched, base of lateral plate normal; protoconch small, often eroded; primary callus wound around spire like a shroud; columella pillar twisted, lirate; foot small, metapodium not bifurcate behind.

Ancillista

Operculum small, ovate, nucleus subterminal; rachidian only slightly arcuate, base of lateral plate proportionally massive; protoconch relatively large and blunt; primary callus a thin glaze, usually leaving sutures free; columella pillar barely twisted, not lirate; foot large, metapodium deeply bifurcate behind.

Amalda

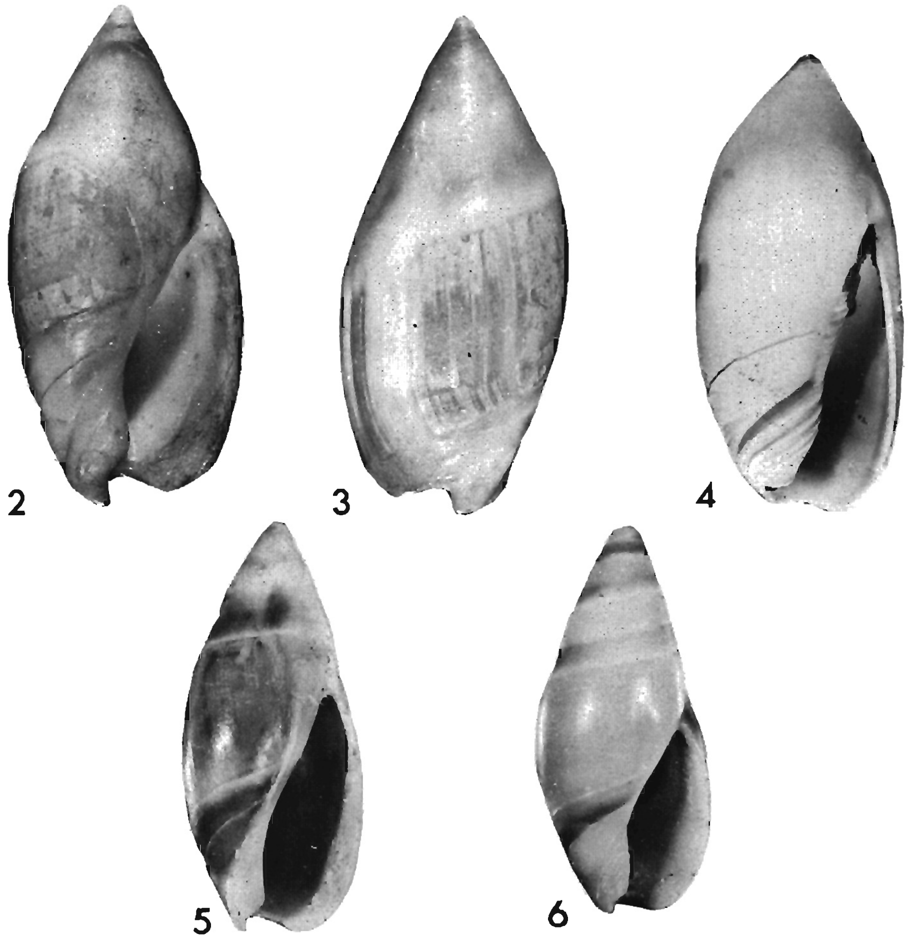
Operculum varying in size, ovate to narrowly elliptical, nucleus subterminal; rachidian plate moderately to slightly arcuate, base of lateral plate normal; protoconch small; primary callus glaze-like, not forming a false suture; columella pillar as in *Ancillus*.

The three species of *Amalda* here described are not allocated to subgenera, as these are in urgent need of revision.

Amalda crosnieri sp. nov. (Figs 2–3)

Diagnosis: Ovate-biconical, breadth 0,46–0,49 of length; spire sharp, angle 54°–69°, covered by primary callus, with a tongue-shaped secondary callus pad on underside; labrum opisthocline, foreshortened, without a denticle, extending posteriorly as a ridge as far as suture; no ancillid groove; columella pillar twisted, with 4–7 pleats, outer 2–3 coarse, often bifid; callus deposits microshagreened; white, spire tinged with light orange-yellow; maximum length about 27 mm.

Description: Ovate-biconical, breadth 0,46–0,49 of length, body whorl slightly shouldered; spire sharp, angle 54°–69°, slightly cyrtoconic, a little shorter than aperture (aperture 0,55–0,59 of total length). Sutures completely masked by a microshagreened primary callus glaze, exposing only the first protoconch whorl (and sometimes part of the second); overlain by a large, thick tongue-shaped deposit of microshagreened



Figs 2–6. Holotypes of: 2–3, *Amalda crosnieri* sp. nov., dimensions 23,2 × 10,5 mm; 4, *Chilotygma testudae* sp. nov., 13,3 × 6,1 mm; 5, *Amalda lemaitrei* sp. nov. 19,1 × 8,2 mm; 6, *A. jenneri* sp. nov. 11,8 × 5,2 mm.

secondary callus, which extends up right side of spire almost to apex, across ventral surface to the left side, over paries to the columella pillar and behind labrum to the base; this callus fills the posterior angle of the aperture, and at the termination of the penultimate whorl forms a thickened ridge-like extension of the labrum. Aperture rather broad, greatest width median, posterior end narrowly rounded; labrum fairly thick, opisthocline, without a basal denticle, foreshortened, termination slightly above columella base, siphonal notch deep. Columella pillar twisted, termination acute, sharply curved, basal notch deep; microshagreened, with 4–7 oblique pleats, often bifid, outer 2–3 coarse, inner ones fine. Anterior fasciolar groove shallow, anterior fasciolar band convex; posterior fasciolar band crossed by a blunt ridge, with the adjacent surface concave; no distinct ancillid band or groove. Median zone of body whorl smooth, save for growth lines, which become rather coarse towards back of labrum.

Colour yellowish-white, spire and subsutural region of body whorl and posterior half of fasciolar band tinged with light orange-yellow; aperture, columella and most of secondary callus white.

Protoconch conical, limits not clear, about two whorls, basal diameter about 1,5 mm. Teleoconch whorls about three.

Dimensions: 23,2 × 10,5 mm (holotype); 26,8 × 12,9 mm, 20,4 × 9,4 mm (paratypes).

Distribution: Known only from the type locality, 12°39,5′S, 48°16,5′E, off Nosy Bé, NORTH-WESTERN MALAGASY, in 240 metres on calcareous quartz sand.

Type material: Paratypes 1–4, N.M. G3442/T2065, leg. A. Crosnier, 11/X/74. Holotype presented to the M.N.H.N., paratypes 5–6 in O.R.S.T.O.M. coll.

Remarks: A. crosnieri superficially resembles *A. mamillata* (Hinds, 1844) and *A. montrouzieri* (Souverbie, 1844) from the western Pacific, but in these species the spire callus is very thick and spirally sulcate, and an ancillid groove and notch are present.

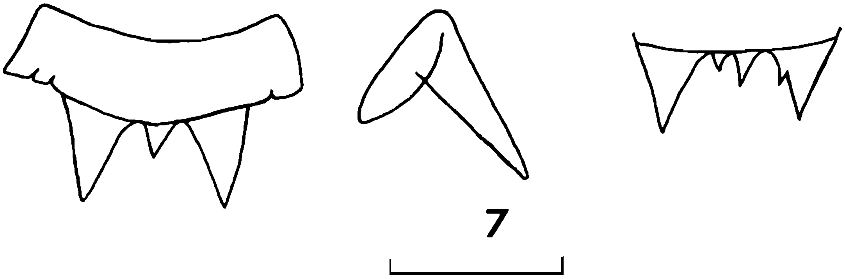
Named in honour of Dr Alain Crosnier, of O.R.S.T.O.M., whose dredgings off northern Malagasy have yielded so many interesting Mollusca.

Amalda lemaitrei sp. nov. (Figs 5, 7)

Ancilla bullioides (*non* Reeve); Thiele, 1925: 157 (191), pl. 33, (21), fig. 18.

Diagnosis: Oblong-fusiform, breadth 0,37–0,43 of length, thin-shelled, spire high, angle 36°–53°, primary callus thin, exposing protoconch, secondary callus tongue-shaped, rather thin, microshagreened; ancillid groove and labral tooth absent; light yellowish-brown, fasciole and subsutural region brownish-orange, spire callus white; maximum length about 21 mm.

Description: Oblong-fusiform, somewhat variable in shape, breadth 0,37–0,43 of length, body whorl gently convex, greatest width median or just posterior to middle; spire high (aperture 0,51–0,63 of total length of shell), angle 36°–53° (mean of 25 examples 45°), slightly cyrtoconic to slightly coeloconic; sutures masked by a thin primary callus glaze, only the protoconch being exposed; this callus is delimited anteriorly by a slight furrow; secondary callus deposit thin, slightly milky, very



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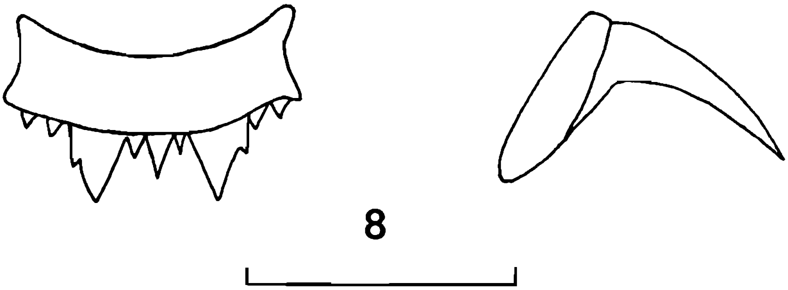

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Figs 7–8. Radulae of: 7, *Amalda lemaitrei*, figure on right showing variation in cusp pattern on rachidian; 8, *A. jenneri*. Scale—0,05 mm.

faintly and minutely microshagreened, tongue-shaped, covering right ventral side of spire and entire parietal region. Aperture elongate triangular, posteriorly acute, labium sinuous, paries gently convex, siphonal notch deep; labrum thin, orthocline, edge slightly concave in lateral view, without a basal tooth. Columella pillar only moderately twisted, its lip concave, basal sinus shallow; sculptured by 4–5 subequal pleats, which tend to fuse anteriorly; their interstices, as well as the anterior fasciolar groove, are finely microshagreened. Fasciole divided into an anterior and posterior band, both flattened, but posterior one slightly declivous. Median part of body whorl with fine growth lines; shell thin, somewhat translucent.

Median part of body whorl light yellowish-brown, bordered above and below by a white band, fasciole and subsutural region brownish-orange, spire callus and columella pillar white, aperture tinged with brown.

Protoconch broadly conical, limits not discernible, basal diameter approximately 1,4 mm. Teleoconch whorls about four.

Dimensions: 19,1 × 8,2 mm (holotype); 20,8 × 8,1 mm, 19,1 × 7,3 mm 15,8 × 5,9 mm (paratypes).

Operculum narrowly ovate, filling aperture, with subterminal nucleus, translucent amber colour.

Radula (Fig. 7): rachidian rather narrow, tricuspidate, median cusp much weaker than lateral cusps, intermediary denticles weak and very irregular, traces of feeble denticles present on either side of lateral cusps; basal margin shallowly arcuate; lateral plates normal, uncinus sharp, longer than base; 74 rows.

Distribution: AGULHAS BANK, off Tsitsikama coast, in about 155 mm.

Locality records: off Cape St Blaize area, *ex pisce* (type material); 35°16′S, 22°26,7′E, 155 mm (Thiele).

Type material: Holotype NM A5177/T2068; paratypes 1–37, NM A5178/T2069; 38–41 in coll. A. Jenner, 42–43 in coll. R. le Maître; paratype 44, NM A5179/T2072 radula slide M143.

Remarks: This small species differs widely from *A. bullioides* (Reeve, 1864), with which it was confused by Thiele, in its smaller size, absence of an ancillid groove and denticle, and lower, less calloused spire. It is probably closest to *A. jenneri*, sp. nov. in general form, coloration and absence of an ancillid groove and denticle. From that it differs in its more oblong shape, large size, more heavily calloused spire, longer columella pillar and differently shaped spire.

Named in honour of Mr R. le Maître, who has provided the material on which this species is based.

Amalda jenneri sp. nov. (Figs 6, 8)

Diagnosis: Fusiform, breadth 0,41–0,45 of length, spire longer than aperture, angle 38°–47°, whorls convex, base strongly narrowed, sutures covered by translucent primary callus which leaves whorls medially free; no secondary callus; columella pillar short and moderately twisted, 5–7 subequal pleats; no ancillid groove or denticle; fasciole divided by a deep groove into two convex bands; brownish-pink to light brown, sutural callus and posterior fasciolar band deep orange, bordered with white, anterior fasciolar band white; maximum length about 14 mm.

Description: Fusiform, breadth 0,41–0,45 of length, body whorl convex, base strongly narrowed; spire high, orthoconic or slightly cyrtoconic, angle 38°–47°, relative aperture length 0,43–0,48 of total; spire whorls gently convex, sutures covered (but not masked) by semi-transparent primary callus, which leaves the median part of each whorl and the protoconch free, and terminates in a slight pad in the parietal region; callus delimited anteriorly by a slight spiral groove; no secondary callus. Aperture elliptical, moderately acute posteriorly, greatest width median, labium concave, medially rather sunken, paries almost straight, siphonal notch rather deep; moderately thickened posteriorly, evenly curved, base sometimes slightly foreshortened, edge straight and orthocline in lateral view, without a basal tooth; columella pillar short and moderately twisted, its lip straight or slightly convex, basal sinus deep; sculptured by 5–7 subequal pleats, which tend to fuse anteriorly; bordered by a shallow but rather wide anterior fasciolar groove, which is microshagreened, as are the interstices between the pleats. Fasciole divided by a rather deep groove; both fasciolar bands distinctly convex, posterior fasciolar groove deep. Median part of body whorl smooth, except for growth lines.

Colour (ISCC–NBS terminology) brownish-pink or light greyish-brown to light brown, sutural callus and posterior fasciolar band deep orange, bordered anteriorly and posteriorly by a white line, anterior fasciolar band and columella pillar white, aperture tinged with brown.

Protoconch narrowly domed, translucent, about 2½ whorls, basal diameter 1,5–1,6 mm. Teleoconch whorls about 3½.

Dimensions: 11,8 × 5,2 mm (holotype); 13,8 × 8 mm, 11,7 × 4,8 mm (paratypes).

Operculum: as in *A. lemaitrei*.

Radula (Fig. 8): as in *A. lemaitrei*, but intermediary and lateral denticles well developed; about 40 rows.

Distribution: AGULHAS BANK, in Cape St Blaize area, depth unknown.

Type material: Holotype NM A5175/T2066; off Cape St Blaize, don. R. le Maître. Paratypes 1–23, NM A5176/T2067, don. R. le Maître and A. Jenner; paratypes 24–27 in coll. R. le Maître; nos. 28–36 in coll. A. Jenner. Paratypes will be distributed to the South African Museum, M.N.H.N., U.S.N.M. and British Museum (Natural History).

Remarks: This characteristic little species appears to be allied to *A. hilgendorfi* (Von Martens, 1897) from Japan and the Malagasy Republic, but is very much smaller and less slender with a shorter body whorl.

Named in honour of Mr Allen Jenner, who has not only kindly donated a radula slide of paratype 36 but loaned many important specimens from his ancillid collection.

Genus *Chilotygma* H. & A. Adams, 1853

Chilotygma H. &. A. Adams, 1853: 149. Type species (by monotypy): *Ancillaria exigua*, Sowerby, 1830.
Chiloptygma (emend.) Fischer, 1883: 600.

Under article 32(*a*)(ii) of the emended International Code of Zoological Nomenclature, H. & A. Adams's original spelling *Chilotygma* must be retained. Members of this genus are somewhat similar to species of *Sparella* Gray, 1857, a subgenus of *Ancilla*, and similarly retain the plesiomorphic tricuspidate rachidian plate: however, this plate is narrow and strongly arched, with a very prominent median cusp, and the shell bears a distinctive ridge-like parietal callus. Three Recent species may be referred to *Chilotygma*, namely *Ancillaria exigua* Sowerby, 1830 (= *Ancillaria unidentata* Sowerby, 1895), *Ancilla minima* Thiele, 1925, and *A. sulcata* Thiele, 1925, all from the western Indian Ocean. A fourth species is here added.

Several American species whose taxonomic positions are in need of investigation may also be mentioned here. *Ancilla matthewsi* Burch & Burch, 1967, from Brazil, superficially resembles *Chilotygma* in possessing a parietal pleat, but has a *Sparella*-type radula. *A. paralamellata* Mansfield, 1925, and *Ancillaria lamellata* Guppy, 1866, from the Miocene of Trinidad, referred to *Chilotygma* by Chavan (1965), are probably precursors of the *matthewsi* lineage.

Chilotygma testudae sp. nov. (Fig. 4)

Diagnosis: Subcylindrical, thick-shelled, spire acute (50°–70°), aperture narrow, labium rather straight, with a transversely plicate callus pad extending along most of length of paries, columella pillar wide, with 4–6 strong ridges, a very shallow anterior fasciolar groove and a deep basal notch; uniform white or pale yellowish; maximum length about 12 mm.

Description: Solid, subcylindrical, breadth 0,43–0,50 of length, sides gently convex; spire fairly high conical, with straight, slightly concave or convex sides, spire angle 50°–70° (mean of 11 examples 65°), sutures completely masked by callus, obscuring individual whorls. Ancillid band absent (very rarely a faint spiral line suggesting an obsolete ancillid groove); fasciolar band not divided, convex, slightly elevated, with strong, oblique, growth lines; anterior fasciolar groove very shallow. Columella pillar wide and strongly twisted, only slightly foreshortened, so that base is barely oblique; 4–6 strong, oblique folds, covering practically the whole surface, becoming progressively weaker basally; columellar lip convex, with a deep basal sinus. Anterior 0,7–0,8 of parietal lip covered by a tongue-shaped callus, fusing basally with the columella pillar and ending abruptly posteriorly, although not forming a distinct fold; this pad bears short, irregular transverse ridges, of which 4–6 posterior ones are stronger than the others, together forming a slight mid-parietal convexity; remainder of paries covered by a thin film, filling posterior angle of aperture. Columella pillar, external rim of siphonal canal and labrum very finely microshagreened, fasciolar band and paries smooth. Aperture equal to 0,50–0,58 total length, narrowly cuneiform; acute posteriorly, with barely sinuous labium, greatest width at base; siphonal canal wide and fairly deep, siphonal notch moderately indented; labrum thickened posteriorly, without a basal tooth.

Colour uniform white or cream, rarely pale yellow, interior sometimes tinged with pale yellow.

Protoconch with limits not clear, about 1½ whorls, broadly conical with a rounded apex, maximum diameter approximately 1 mm. Teleoconch whorls three.

Dimensions: 13,3 × 6,1 mm (holotype); 13,8 × 6,4 mm, 12,5 × 5,5 mm, 6,4 × 3,2 mm (paratypes).

Distribution: Known only from the GULF OF ADEN.

Type material: Holotype M.N.H.N. coll., Djibouti, leg. F. P. Jousseaume, 1921. Paratypes 1–4, M.N.H.N., same data. Paratype 5, M.N.H.N. coll., Aden or Red Sea, leg. Jousseaume, 1921. Paratypes 6, 7, NM G2686/T2686, Gulf of Aden, H. Burnup coll. Paratypes 8–10, Djibouti, leg. M. André, don. S. D. Kaicher, as follows: paratype 8, NM G8237/T2064; paratype 9, B.M.(N.H.) coll.; paratype 10, U.S.N.M. coll.

Paratype 5 was boxed with a specimen of *Ancilla tronsoni* (Sowerby, 1859); two locality labels are present, one citing 'Aden', the other 'Mer Rouge', and it is now impossible to ascertain to which each label applies.

Remarks: From known species of *Chilotygma*, *C. testudae* differs in its transversely plicate parietal callus. The closest species is *C. minima* (Thiele, 1925) from East Africa, which resembles *C. testudae* in shape and lack of colour, but has a narrower columella pillar and a conspicuous callus deposit in the posterior parietal region.

C. testudae is probably the species that has been recorded from the Gulf of Aden as *Ancillaria striolata* Sowerby, 1859, and *A. eburnea* Deshayes, 1830, names that have been indiscriminately applied to any small, pale Indian Ocean ancillid.

The present species is named in honour of Ms A.-M. Testud of the M.N.H.N.

ABBREVIATIONS

B.M.(N.H.) = British Museum (Natural History), London.
M.N.H.N. = Muséum National d'Histoire Naturelle, Paris.
N.M. = Natal Museum.
O.R.S.T.O.M. = Office de la Recherche Scientifique et Technique Outre-Mer, Paris.
U.S.N.M. = United States National Museum.

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